DOCUMENT RESUME

ED 327 986 EC 230 060

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TITLE A Study of 571 Children with Developmental Disorders in a Slum-Population of Bombay.
PUB DATE Aug 89
NOTE 7p.; Paper presented at the International Conference on Early Education and Development (Hong Kong, July 31-August 4, 1989). Document is printed on colored paper with light type. Best copy available.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Clinical Diagnosis; *Developing Nations; *Developmental Disabilities; Early Intervention; Educational Diagnosis; Elementary Education; Foreign Countries; *Handicap Identification; Intervention; Preschool Education; *Psychological Evaluation; *Slum Environment
IDENTIFIERS Early Identification; *India (Bombay)

ABSTRACT

This paper summarizes a study of 571 children with developmental disabilities between 6 weeks and 12 years of age living in the largest slum in Asia, the Dharavi neighborhood of Bombay, India. Each child was administered developmental and psychological tests, diagnosed, and treated by a special early intervention clinic. Most had not had their disabilities detected before the age of 6 months. Greater developmental screening efforts are called for. (PB)

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A STUDY OF 571 CHILDREN WITH DEVELOPMENTAL DISORDERS IN A SLUM-POPULATION OF BOMBAY

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The advent of antibiotics and advances in medical technology have brought many diseases in children under control. However, developmental disorders continue to distress us significantly. These disorders produce long-term effects on mental health and educational capacities of children. In fact, these handicapping conditions seem to be more prevalent now than in past because of improved techniques & methods of management of critically ill children resulting in their improved survival without the appreciable improvement in morbidity.

By definition, 'handicap' is a condition that retards, distorts or otherwise adversely affects the normal growth and development of a child. Study of child development and application of this knowledge to pediatric practice help the Pediatrician in better understanding of development of a subnormal child or a handicapped child.

The disorders of development can be classified as :

1. Disorders of motor development :
   - Cerebral palsy
   - Degenerative CNS disorders
   - Sequele of intracranial infections
   - Motor neurone disease.

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2. Disorders of intellegence
   - Mental subnormality
   - Mental retardation

3. Disorders of perception
   - Blindness
   - Deafness

4. Disorders of speech and language development

5. Disorders of behaviour

6. Disorders having secondary effects on the development
   - Malnutrition
   - Chronic illness
   - Congenital heart disease

Many of these disorders are prevalent in our country and early detection and early intervention play a significant role in management of children with these disorders.

Material & Method :

The present study was carried out at the special early intervention clinic attached to Pediatric Department of L.T.M.G. Hospital and L.T.M. Medical College, Bombay. Our institution caters to the biggest slum population of Asia - Dharavi. The cases with suspected delayed development were referred to us by Pediatricians, Pediatric residents, Therapist, Medical Social Worker and Community Health Workers.

All the children were examined by the Pediatrician and the attending therapist. The details about the antenatal problems, significant perinatal events & physical and neuro-developmental examination results were recorded in a special proforma. The motor, perceptual, social and language development was assessed by using Munich development screening scale. The children were subjected to the necessary investigations like radiological examination, biochemical tests, IQ or DQ estimation and E.E.G. Visual and auditory functions were assessed by the specialists in the respective fields.

The children were then referred to the therapist for occupational therapy. Medical social worker interviewed the parents at the first follow up visit. Occupational therapy

was given to all the children except the school-aged children with mental retardation. Depending upon their I.Q. test results social worker arranged for admission to the special school or class for children with mental retardation. The children having hearing defects were referred to the special school for deaf children conducted by our institution.

Observation and comments :

A total of 571 children with developmental disorders were registered at the clinic from January 1985 to February 1989. Ninety one percent of these children were residing in the slum area. There were 317 (55.52%) boys and 254 (44-48%) girls in this prospective study. Their ages ranged from 6 weeks to 12 years but maximum number of children (63-92%) were registered below the age of three years. Further split-up of age groups showed that very few children (6.48%) were referred below 6 months of age.

The various disorders that were seen at the clinic are listed in Table I. Cerebral Palsy (29.42%) and Mental Retardation including Hypothyroidism and Down's Syndrome were the commonest problems encountered in these children. Amongst the different clinical types of Cerebral Palsy, Spastic Diplegia was the commonest variety. Other types included Spastic Quadriplegia, Hemiplegia and Athetoid Cerebral Palsy (Table II) The associated problems in children with Cerebral Palsy are shown in Table III. Mental Retardation and Epilepsy were the commonest associated problems seen in these children.

The predisposing prenatal, natal and post-natal factors observed in children with Mental Retardation, Developmental Retardation and Cerebral Plasy are listed in Table IV. Birth Asphysxia (21.01%) Neonatal Convulsions (15.94%) and Hyper Bilirubinemia (13.52%) were the most common neonatal factors accounting for the Developmental Delay. Post Neonatal Meningitis or Encephalitis is one of the common serious infection illnesses during childhood, seen Developing Countries. In our series 30 children had had Meningo-Encephalitis during early infancy which lead to the delay in the development.

Table V shows the duration of follow-up in the children. Only 26.5% of children attended the clinic for follow-up, beyond 6 months period. Dharavi slum area has a floating population of migrant labourers which is the main obstacle in having regular follow-up and treatment. In many families both the parents are earning members and go out for work. This interfered with their clinic attendance for home-management training and bringing the children regularly for the follow-up. Other important medico-social

problems commonly seen in these children were under nutrition and repeated infections which caused hinderance in the management.

Summary and Conclusion :

The study of 571 children revealed that the majority of cases with developmental disorders were detected after the age of six months. Although the disorders like micro-cephaly, hypothyoidism and Down's syndrome can be easily detected immediately after birth, they were not diagnosed early. It is also evident from this data that there are certain high risk factors associated with developmental disorders and the various medico-social factors pose the problems in management and follow-up of these cases.

If we have to emphasize on early detection, the babies with problems like Low Birth Weight, Prematurity, Asphyxia, Hyper bilirubinemia, Seizures need to be screened for developmental problems regularly. However, there are many children who have developmental disorders but no previous risk factors. Thus ideally, all the children need to be screened. The question is, whether it is feasible in a large child population in a country like India and what will be the reliability index.

A new concept of developmental surveillance has been introduced recently which emphasizes on the regular check-up of the children for assessment of developmental skills. This can be combined with the growth monitoring programme for Under-6 children and be undertaken by trained community - nurses or health workers. This programme can facilitate the early detection of developmental disorders. Concomitantly, the facilities to provide the services to those detected to be sub-normal should be arranged and provided in the same programme.

Table I

Pattern of Disabilities at our clinic

Cerebral Palsy	29.42%
Mental Retardation	25.92%
Developmental Retardation	16.98%
Down's Syndrome	5.08%
Hypothyroidism	2.10%
Hearing and Speech Defects	5.60%
PEM with delayed development	5.60%
Miscelleneous	9.30%

Table II

Types of Cerebral Palsy (168)

Type	No. of children	Percentage
Spastic diplegia	82	48.80
Spastic quadriplegia	38	22.61
Spastic hemiplegia	12	7.14
Athetoid	12	7.14
Hypotonic	19	11.30
Mixed	4	2.38

Table III

Associated problems in Cerebral Palsy

Type	No. of children	Percentage
Mental retardation	102	60.71
Epilepsy	30	17.85
Visual Defect	28	16.66
Hearing defect	16	9.52
Behavioural problems	20	11.90

Table IV

Etiological Factors

	MR (148)	DR (98)	CP (168)
Maternal Toxaemia	1	2	-
Antenatal Infection	2	1	-
LBW / Preterm	6	11	15
Birth Injury	11	9	1
Brain Malformation	3	3	2
Asphyxia	28	17	42
Jaundice	23	13	20
Convulsions	33	15	18
Septicaemia	5	-	-
Neonatal Meningitis	1	-	3
P.N.N. Meningitis/Encephalitis	12	9	9

Table V

Follow Up

First 3 months after registration	90.2%
3 - 6 months after registration	72.43%
More than 6 months after registration	26.5%